

CLAIMS

We claim:

1. Apparatus comprising:

5 a rotatable picking member adapted to work in conjunction with a stripping member to pick notes generally one at a time from a stack of notes in an automated banking machine, the picking member including a first disk portion having a high friction arcuate segment, and a projecting surface adjacent and transversely disposed from the high friction arcuate segment, wherein the picking member and stripping member are adapted to relatively move to separate from the stack an end note bounding the stack, and wherein the projecting portion acts on a leading edge area of each end note as the end note is acted upon by opposing forces applied to the note by the high friction arcuate segment of the picking member and the stripping member to prevent deformation of the leading edge area.

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2. The apparatus according to claim 1 wherein the first disk portion of the picking member includes an arcuate projecting portion in supporting connection therewith, and wherein the arcuate projecting portion includes the projecting surface.

3. The apparatus according to claim 1 wherein the projecting surface extends radially outward relative to the first disk portion beyond the high friction arcuate segment.
4. The apparatus according to claim 2 wherein the projecting surface extends radially outward relative to the high friction arcuate segment through an arc on the first disk portion that is less than an arc through which the high friction arcuate segment extends.
5. The apparatus according to claim 4 wherein the high friction arcuate segment is bounded by a forward boundary, wherein in separating an end note from the stack a leading area adjacent the forward boundary of the high friction arcuate segment first engages the end note, and wherein the projecting surface extends radially outward beyond the high friction arcuate segment adjacent the leading area.
6. The apparatus according to claim 5 wherein the first disk portion includes a circumferential recess, and wherein a circumferential resilient band extends in the recess, and the resilient band includes the high friction arcuate segment, and wherein the projecting surface bounds the recess adjacent the leading area.
7. The apparatus according to claim 6 wherein the first disk portion includes a low friction arcuate segment, and wherein the low friction arcuate segment includes a projecting surface.

8. The apparatus according to claim 6 wherein the high friction arcuate segment in the leading area includes angled tread.

9. The apparatus according to claim 6 wherein the resilient band is transversely wider in an area comprising the high friction arcuate segment relative to at least one other area of the resilient band.

10. The apparatus according to claim 5 wherein the picking member further comprises a first outboard high friction portion disposed on a first transverse side of the first disk portion, and a second outboard high friction portion disposed on a second side of the first disk portion, the second side being opposed of the first side, and wherein the first and second outboard high friction portions are transversely aligned with at least a portion of the high friction arcuate segment, wherein the first and second outboard high friction portions engage and move the end note.

11. The apparatus according to claim 10 wherein the first and second outboard high friction portions are transversely aligned with other than the leading area of the high friction arcuate segment.

12. The apparatus according to claim 11 wherein the picking member comprises a first outboard recess, wherein a first outboard resilient circumferential band extends in the first

outboard recess, and wherein the first outboard resilient circumferential band includes the first outboard high friction portion.

13. The apparatus according to claims 12 wherein the first outboard recess is bounded by at least one low friction first flange surface, and wherein the first flange surface extends
5 radially outward beyond the first outboard resilient circumferential band in at least one area other than adjacent the first outboard high friction portion.

14. The apparatus according to claim 13 wherein the first outboard recess is bounded on each transverse side by a low friction flange surface.

15. The apparatus according to claim 11 wherein the picking member includes a central shaft,
10 wherein the first disk portion is supported on the shaft.

16. The apparatus according to claim 15 wherein the picking member further includes a first outboard disk portion supported on the shaft and transversely disposed on a first side of the first disk portion, and a second outboard disk portion supported on the shaft and transversely disposed on a second side of the first disk portion opposed of the first side.

15 17. The apparatus according to claim 16 wherein the first outboard high friction portion is supported on the first outboard disk portion, and the second outboard high friction portion is supported on the second outboard disk portion.

18. The apparatus according to claim 17 wherein at least one of the first and second outboard disk portions includes a circumferential recess therein, wherein a resilient outboard band extends in the circumferential recess, and wherein the resilient band includes a corresponding first or second outboard high friction portion.
- 5 19. The apparatus according to claim 18 wherein the recess is bounded by a low friction flange portion, wherein the low friction flange portion extends further radially outward than the resilient band in an area other than adjacent the corresponding first or second outboard high friction portion.
20. The apparatus according to claim 19 wherein the recess is bounded on each side by a low
10 friction flange portion.
21. The apparatus according to claim 17 wherein the first disk portion includes a circumferential recess, and wherein a resilient band extends in the recess, and wherein the resilient band includes the high friction arcuate portion, and wherein the projecting surface bounds the recess.
- 15 22. The apparatus according to claim 21 wherein the first disk portion includes a low friction arcuate projecting portion, and wherein the low friction arcuate projecting portion includes the projecting surface.

23. The apparatus according to claim 22 and further comprising a stripping member in generally opposed adjacent relation with the high friction arcuate segment, and wherein the low friction arcuate projecting portion is disposed transversely from the stripping member.
- 5 24. The apparatus according to claim 1 wherein in an operative position of the picking member, the projecting surface is transversely disposed of the stripping member.
25. The apparatus according to claim 23 and further comprising a carry away member in generally opposed adjacent relation with the resilient band, and wherein the end note being separated from the stack moves in intermediate relation of the resilient band and the
10 carry away member.
26. The apparatus according to claim 25 wherein the carry away member is transversely disposed of the stripping member.
27. The apparatus according to claim 26 and further comprising an automated banking machine including a housing, and wherein the picking member, stripping member and
15 carry away member are in supporting connection with the housing.

28. The apparatus according to claim 27 wherein the shaft has a first end, and wherein the housing includes a moveable tab portion, and wherein the first end of the shaft is rotatable in supporting connection with the tab portion.
29. The apparatus according to claim 28 wherein the shaft includes a second end opposed of the first end, and wherein the banking machine further includes a rotatable drive shaft portion, and wherein the picking member rotates responsive to rotation of the drive shaft portion, and wherein the tab portion axially biases the shaft of the picking member into engagement with the drive shaft portion.
30. The apparatus according to claim 29 wherein the tab portion is integrally formed with the housing and moveable to enable the picking member to be disengaged from the drive shaft portion.
31. The apparatus according to claim 27 wherein the housing includes a first integrally formed leaf spring portion, wherein the first leaf spring portion is operative to hold the stripping member in abutting relation with the picking member.
32. The apparatus according to claim 27 wherein the housing includes a first integrally formed leaf spring portion, and wherein the first leaf spring portion is operative to hold the carry away member in an abutting relation with the picking member.

33. The apparatus according to claim 32 wherein the housing includes a second integrally formed leaf spring portion, and wherein the second leaf spring portion is operative to hold the stripping member in adjacent relation with the picking member.

34. The apparatus according to claim 33 wherein the automated banking machine includes at least one input device, and wherein the picking member is caused to rotate and to move the end note responsive to at least one input to the at least one input device.

35. Apparatus comprising:

a picking member adapted to work in conjunction with a stripping member to pick sheets generally one at a time from a stack of sheets in an automated banking machine, the picking member including a high friction surface relatively moveable with regard to the stripping member, wherein movement of the picking member relative to the stripping member causes a leading edge area on an end note bounding the stack to move in intermediate relation between the high friction surface and the stripping member, wherein the picking member includes at least one projecting surface extending outward toward the end note and adjacent and transversely disposed from the stripping member, wherein the at least one projecting surface is operative to prevent deformation in the leading edge area as the leading edge area moves between the high friction surface and the stripping member.

36. The apparatus according to claim 35 wherein the high friction surface extends a distance on the picking member along the picking direction from a forward edge bounding the high friction surface, and wherein the at least one projecting surface extends adjacent the forward edge and extends along the picking direction only a portion of the distance that the high friction surface extends on the picking member.

37. The apparatus according to claim 36 and further comprising at least one outboard high friction segment transversely disposed on the picking member of the high friction surface and wherein the at least one outboard high friction segment is transversely aligned with a portion of the high friction surface and is not transversely aligned with the at least one projecting surface.